W. J. PATTOSIEN.

POWER SHIP CLEANING DEVICE.

APPLICATION FILED MAR. 23, 1920.

1,349,167.

Patented Aug. 10, 1920.

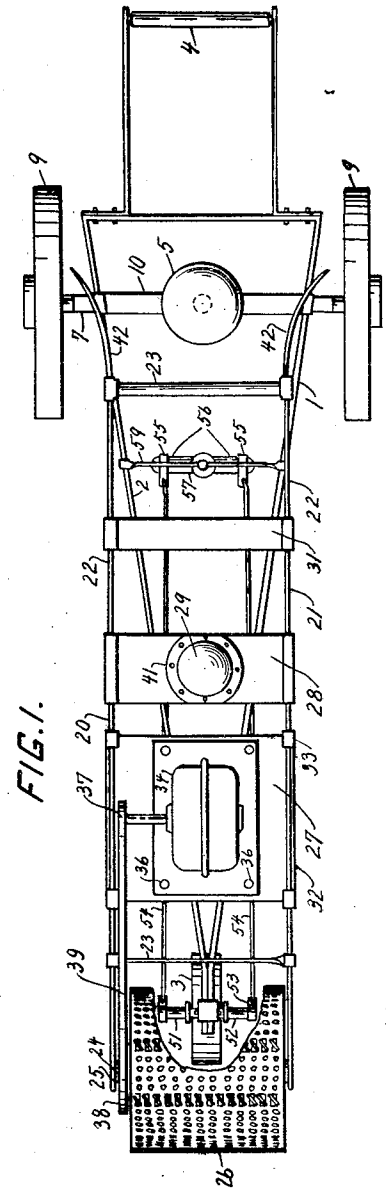


FIG. 1.

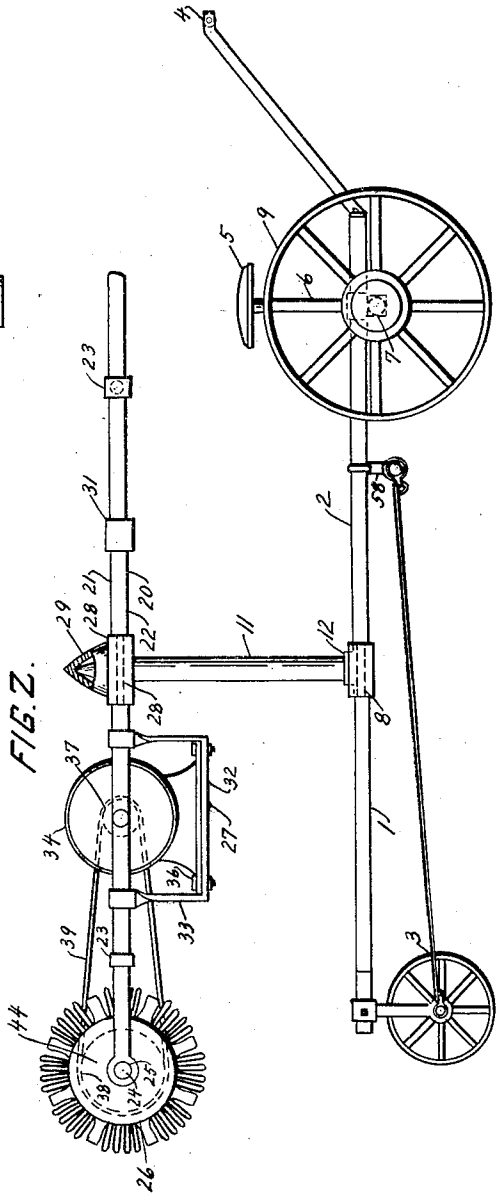


FIG. 2.

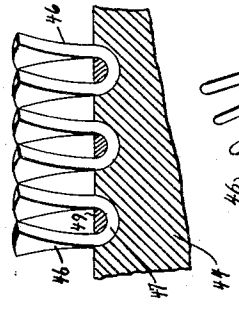


FIG. 3.

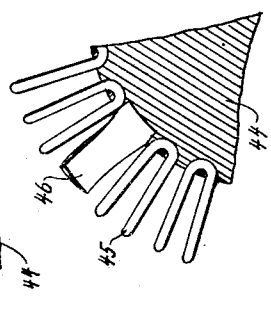


FIG. 4.

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POWER SHIP-CLEANING DEVICE.

1,349,167. Specification of Letters Patent. Patented Aug. 10, 1920.

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To all whom it may concern:

Be it known that I, WILLIAM J. PATTOSIEN, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Power Ship-Cleaning Device, of which the following is a specification.

The present invention relates to a power driven ship cleaning device adapted to be used for the cleaning of the under side of a ship lying in dry dock, and its objects are as follows:

When a ship goes into dry dock, its under side is usually covered with rust and a thick layer of barnacles, which, together with the old paint, have to be removed before the new paint can be applied. At the present time this work is done by hand, that is, by a gang of men equipped with scrapers of convenient sizes and different designs and with hand brushes having steel bristles. Since these men have to work in an upward direction, the cleaning in this manner is considered a very laborious and hard task. The object of the present invention is to have this work done by a motor driven brush, which will be easy to handle, save expenses for labor, and do the work better and more efficiently.

I attain this object by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 represents a plan view of my apparatus,

Fig. 2 represents a side elevation,

Fig. 3 an enlarged sectional detail view of the brush looking at it at right angles to its axis,

Fig. 4 an enlarged sectional detail view of the brush looking at it parallel with its axis.

Similar numerals refer to similar parts throughout the several views.

The truck 1, which may be of any convenient form and is here represented as a three wheel truck consisting of a frame 2, a single front wheel 3, two rear wheels 9, a handle 4, a seat for the operator 5, resting on a rod 6 supported by crossbar 10 attached to the frame 2 somewhere near the rear axle 7, carries on a flat bar 8, stretched across and fastened to the frame 2 somewhere near the center of the truck, a structure consisting of a strong vertical pole 11, preferably of steel, fastened to the bar 8 by an angle iron 12 and pointed at the top. The elements of the surface of the pointed top are not straight as in a cone, but curved as shown in the drawing so as to present a broad bearing surface.

This pole 11 serves as a support to the brush carrier 20, in a manner hereafter to be described. The brush carrier consists of a frame 21, formed of two longitudinal members 22 and two cross-members 23 connecting the same, a shaft 24 near its forward end rotating in holes 25 in said longitudinal members 22, on which shaft brush 26 revolves, a motor support 27, a heavy steel plate 28, carrying the dome 29, and a counterweight 31, slidable on the frame members 22 between plate 28 and the rearward frame member 23.

The motor support 27 consists of a rectangular horizontal steel plate 32 provided with four vertical arms 23, one near each corner, the upper ends of which are adapted to be clamped around and fastened to the two longitudinal members 22 of frame 21 at a convenient distance from the rear of brush 26. A motor 34 is bolted to this support by four bolts 36 so that the motor occupies a central position with reference to the two longitudinal frame members 22 and that its pulley 37 is in line with pulley 38 rigidly fastened to the brush 26. These two pulleys are connected by belt 39.

The heavy plate 28 is fastened to the two longitudinal frame members 22 somewhat to the rear of the motor support 27, its ideal place being such that the top of the dome 29 lies perpendicularly over the center of gravity of the whole structure consisting of brush 26 and carrier 20, thus allowing the slidable counterweight 31 to move the center of gravity either to the front or to the rear of the center of the dome 29.

The dome 29 is fastened to plate 28 by means of a flange 41, the plate 28 being provided with a hole corresponding in size to the opening of the dome. The dome is of such shape and proportions that, when it is resting on the pointed top of pole 11, it will allow the brush carrier 20 to play and sway freely on the pointed top of pole 11 in all directions.

The length of pole 11 should be such that, when the brush carrier 20 is in a horizontal position, an operator sitting on seat 5 can conveniently take hold of and operate the

back cross-member 23 and the rear extensions 42 of the longitudinal members 22 of the frame 21.

In order to adapt the steel brush to the unevenness of the outside of the ship due to the rivets and the joints of the different plates and to give the brush a cutting and scraping effect as well as a mere brushing effect I use for my device a brush of special design. It consists of the solid cylinder 44, wire bristles 45 and blades 46. The bristles 45 are formed in the usual way, that is, pieces of wire of suitable length are fixed with their centers to the cylinder 44 in rows so that their two ends radiate from the surface of the cylinder to form the surface of the brush. One or more rows of these bristles alternate with one or more rows of blades 46, somewhat shorter than the bristles 45. The blades 46 may be described as being made of rectangular metal plates bent into U shape, as shown in Fig. 3, the round part 47 of the U being let into a corresponding hole provided in the surface of the cylinder and held there by strip 49, fastened to the cylinder in some convenient way. Toward the outer circumference of the brush the blades are twisted sufficiently so that each blade will take up all the space left between the two adjoining blades, as shown in Fig. 3. The surfaces of the outer ends of the blades are rounded off so that all points lying in said surfaces also lie in the surface of an imaginary cylinder having the axis of the brush for its axis.

To enable the operator to steer the truck simultaneously with the operation of the brush I provide the truck 1 with a steering apparatus which the operator may control with his feet. It consists of extensions 51 and 52 of the axle of front wheel 3 to the ends of each of which hooks 53 are fastened, which engage one end of rods 54, the other ends of which are fastened to hooks 55 attached to arms 56 of lever 57 which pivots horizontally around the lower end of rod 58, the upper end of which is rigidly fastened to cross-piece 59, resting on and fastened to frame 2 within convenient distance of the operator.

The truck 1 may be pushed or pulled by hand or by motor or gas engine in any suitable manner.

I claim:

1. A longitudinal frame, supported by and freely swinging on a portable pole engaging said frame at or near its center, one end of the frame carrying a rotating brush and a motor in fixed relation, the motor adapted to rotate the brush, the other end carrying a slidable counterweight and means for the operator to swing the frame in a desired position.

2. The combination of a longitudinal frame, balanced by and freely swinging on a pole engaging said frame at or near its center, one end of the frame carrying a rotating brush and a motor in fixed relation, the motor adapted to rotate the brush, the other end carrying a slidable counterweight and means for the operator to swing the frame in a desired position, with a truck carrying the pole, a seat for the operator and a steering device, substantially as described.

WILLIAM J. PATTOSIEN.